

REMARKS

Claims 1-25 are pending in the instant application. Claims 1, 14, 21, 23, and 24 are independent claims, and claims 2-13, 15-20, 22, and 25 depend, respectively, from independent claims 1, 14, 21, and 24. The Applicants request reconsideration of the claims in view of the following remarks.

The Applicants thank the examiner for the courtesy of granting the In-Person Interview at the USPTO in Virginia on May 20, 2004. In the Interview, the Examiner suggested that the numerous cited references in various proposed combinations disclosed all the features of Applicants' independent claims. The Applicants' representative disagreed and asserted that features set forth in Applicants' claims were not disclosed in the cited references.

Claims 1-5, 9, and 13 were rejected under 35 U.S.C. § 102(b) as being unpatentable over Voroba et al., U.S. Patent No. 4,759,070, "Voroba". The Applicants respectfully traverse the rejections. The Applicants respectfully submit that independent claim 1 is at least different from the cited reference for at least the following reasons.

The Applicants set forth in claim 1, a multi-channel sound reproduction system for testing hearing and hearing aids comprising at least one audio source, an audio signal processing system for receiving a plurality of audio signals from the audio source and for generating therefrom a plurality of processed audio signals, a listening position at which a test subject is placed, and a plurality of loudspeakers placed about the listening position. The plurality of loudspeakers are for receiving at least a portion of the plurality of processed audio signals and for converting those processed audio signals received into a combination of sounds that produce at the listening position acoustic elements typical of a real acoustic environment.

Voroba is different than the Applicants' invention as recited in claim 1. Voroba at least fails to disclose an audio signal processing system for generating processed audio signals and a plurality of loudspeakers for converting the processed audio signals into a combination of sounds producing acoustic elements typical of a real acoustic environment. Voroba merely discloses using pre-recorded noise and speech tapes (col. 7, lines 15-24).

The system of Voroba at least does not disclose processing audio signals, as set forth in the Applicants' claim, but rather merely discloses playing pre-recorded sounds. Voroba discloses that a patient may adjust the gain or volume of pre-recorded sounds (col. 7, lines 31-35), but the Applicants respectfully assert that merely turning up the volume does not comprise processing of audio signals, combining of audio signals, etc.

Therefore, for at least the reasons set forth above, the Applicants respectfully assert that claim 1 is allowable over Voroba. The Applicants request that rejection of independent claim 1 under 35 U.S.C. § 102(b) over Voroba be withdrawn.

Regarding dependent claims 2-5, 9, and 13, which depend from independent claim 1, in light of independent claim 1 being allowable over Voroba, the Applicants respectfully submit that rejection of the dependent claims is now moot. The Applicants respectfully assert that dependent claims 2-5, 9, and 13 are allowable over the cited reference. The Applicants request that rejection of dependent claims 2-5, 9, and 13 under 35 U.S.C. § 102(b) over Voroba be withdrawn.

Claims 6-8 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Voroba in view of Grimani U.S. Patent No. 6,498,852, "Grimani". The Applicants respectfully traverse the

rejections. As set forth above, Voroba is different from the Applicants' invention as set forth in independent claim 1, from which claims 6-8 depend.

Grimani fails to remedy the deficiencies of Voroba. Grimani merely discloses a low frequency effect (LFE) audio signal processing system (abstract). Grimani does not disclose an audio signal processing system for generating processed audio signals and a plurality of loudspeakers for converting the processed audio signals into a combination of sounds producing acoustic elements typical of a real acoustic environment.

Additionally, the proposed combination of Voroba and Grimani fails to disclose an audio signal processing system for generating processed audio signals and a plurality of loudspeakers for converting the processed audio signals into a combination of sounds producing acoustic elements typical of a real acoustic environment.

Therefore, regarding dependent claims 6-8, which depend from independent claim 1, in light of independent claim 1 being allowable over the base reference Voroba, the Applicants respectfully submit that rejection of the dependent claims is now moot. The Applicants respectfully assert that dependent claims 6-8 are allowable over the proposed combination of references. The Applicants request that rejection of dependent claims 6-8 under 35 U.S.C. § 103(a) over the proposed combination of Voroba and Grimani be withdrawn.

Claims 10-12 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Voroba in view of Ide et al. U.S. Patent No. 5,260,920, "Ide". The Applicants respectfully traverse the rejections. As set forth above, Voroba is different from the Applicants' invention as set forth in independent claim 1, from which claims 10-12 depend.

Ide fails to remedy the deficiencies of Voroba because Ide also fails to at least disclose an audio signal processing system for generating processed audio signals and a plurality of loudspeakers for converting the processed audio signals into a combination of sounds producing acoustic elements typical of a real acoustic environment. Instead, Ide merely discloses a sound collecting and reproducing system (abstract).

Additionally, the proposed combination of Voroba and Ide fails to disclose an audio signal processing system for generating processed audio signals and a plurality of loudspeakers for converting the processed audio signals into a combination of sounds producing acoustic elements typical of a real acoustic environment.

Therefore, regarding dependent claims 10-12, which depend from independent claim 1, in light of independent claim 1 being allowable over the base reference Voroba, the Applicants respectfully submit that rejection of the dependent claims is now moot. The Applicants respectfully assert that dependent claims 10-12 are allowable over the proposed combination of references. The Applicants request that rejection of dependent claims 10-12 under 35 U.S.C. § 103(a) over the proposed combination of Voroba and Ide be withdrawn.

Claims 14-20 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Shennib U.S. Patent No. 5,825,894, “Shennib” in view of Kasai et al. U.S. Patent No. 6,067,360 “Kasai”. The Applicants respectfully traverse the rejections. The Applicants respectfully submit that the proposed combination of references is different from independent claim 14 for at least the following reasons.

The Applicants set forth in claim 14, a multi-channel sound reproduction system for testing hearing and hearing aids comprising at least one audio source, a listening position at

which a test subject is placed, and a plurality of loudspeakers located at approximately ear level of a test subject in the listening position. The plurality of loudspeakers is for receiving a plurality of audio signals from the audio source. The system may also comprise a first further loudspeaker located at approximately ear level and at front and center of a test subject in the listening position. The first further loudspeaker may be for receiving a further audio signal from the audio source. The system may further comprise a second further loudspeaker located at an overhead center position above the test subject in the listening position. The at least one audio source may be transmitting a time-offset or delayed sum of at least a portion of the plurality of audio signals and the further audio signal to the second further loudspeaker.

Shennib is different than the Applicants' invention as recited in independent claim 14. As stated in the Office Action (page 7, lines 3-8), Shennib does not disclose the at least one audio source transmitting a time-offset or delayed sum of the at least a portion of the plurality of audio signals and the further audio signals to the second further loudspeaker. The Applicants agree that Shennib fails to disclose, among other things, the feature recited above, however, the Applicants respectfully submit that Kasai fails to remedy the deficiencies of Shennib.

Kasai fails to remedy the deficiencies of Shennib because Kasai also at least fails to disclose at least one audio source transmitting a time-offset or delayed sum of the at least a portion of the plurality of audio signals and the further audio signals to the second further loudspeaker. Kasai is merely a system for creating surround sound effects (col. 2, lines 26-30). Therefore, the combination of Shennib and Kasai as proposed in the Office Action fails to teach all the features set forth in the Applicants claims.

Further, the Applicants respectfully submit that both references of the proposed combination of Shennib and Kasai fail to provide motivation for combining the surround sound system of Kasai with the hearing aid fitting and evaluation system disclosed by Shennib. The Applicants respectfully submit that the cited references are not analogous and therefore are not combinable. Additionally as set forth above, even if combined, the proposed combination fails to disclose every feature set forth in Applicants claims.

Therefore, for at least the reasons set forth above, the Applicants respectfully assert that claim 14 is allowable over the proposed combination of references. The Applicants request that rejection of independent claim 14 under 35 U.S.C. § 103(a) over Shennib and Kasai be withdrawn.

Regarding dependent claims 15-20, which depend from independent claim 14, in light of independent claim 14 being allowable over the proposed combination of references, the Applicants respectfully submit that rejection of the dependent claims is now moot. The Applicants respectfully assert that dependent claims 15-20 are allowable over the proposed combination of references. The Applicants request that rejection of dependent claims 15-20 under 35 U.S.C. § 103(a) over Shennib and Kasai be withdrawn.

Claims 21, 22, 24 and 25 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Ide in view of Voroba. The Applicants respectfully traverse the rejections. The Applicants respectfully submit that independent claims 21 and 24 are different from the proposed combination of references for at least the following reasons.

The Applicants set forth in claim 21, a method of testing hearing and hearing aids comprising recording sounds of an acoustic environment via a plurality of microphones placed

about and facing away from a recording position, storing the sounds recorded by each of the plurality of microphones as audio signals in an audio source, recording speech, storing the recorded speech as a target signal in the audio source, and reproducing, from the stored target signal and the stored audio signals and via a plurality of loudspeakers placed about and facing into a listening position, sounds representative of the speech and of the acoustic environment at the listening position.

The Applicants set forth in claim 24, a multi-channel sound reproduction system for testing hearing and hearing aids comprising at least one audio source, a listening position at which a test subject is placed, and a plurality of loudspeakers placed at locations that are approximately equidistant from and facing toward a center of the listening position. The plurality of loudspeakers is for receiving audio signals from the audio source. The audio signals are representative of recordings made by a plurality of microphones that are approximately equidistant from and facing away from a center of a recording position. The recording position may be located in an environment having sounds that are desirable to be reproduced at the listening position.

Ide is different than the Applicants' invention as recited in independent claims 21 and 24. In the Office Action (page 8), it is stated that Ide discloses every feature set forth in Applicants' claims except recording speech. The Applicants respectfully assert that Ide also at least fails to at least disclose storing recorded speech as a target signal and reproducing the stored target signal and additional audio signals representative of speech in an acoustic environment. Ide is different from the Applicants' claims.

Voroba fails to remedy the deficiencies of Ide. Voroba merely discloses using pre-recorded noise and speech tapes (col. 7, lines 15-24). Voroba at least does not disclose actually recording any sounds or reproducing a stored target signal and additional audio signals. The system of Voroba does not disclose recording audio signals, as set forth in the Applicants' claim, but rather merely discloses playing pre-recorded sounds.

Further, the Applicants respectfully submit that there is no motivation provided in either of the cited references that would lead one to combine Ide and Voroba. The Applicants also respectfully submit that the proposed combination fails to teach every feature set forth in Applicants' claims.

Therefore, for at least the reasons set forth above, the Applicants respectfully assert that claims 21 and 24 are allowable over the proposed combination of references. The Applicants request that rejection of independent claims 21 and 24 under 35 U.S.C. § 103(a) over Ide and Voroba be withdrawn.

Regarding dependent claims 22 and 25, which depend from independent claims 21 and 24, in light of independent claims 21 and 24 being allowable over the proposed combination of references, the Applicants respectfully submit that rejection of the dependent claims is now moot. The Applicants respectfully assert that dependent claims 22 and 25 are allowable over the proposed combination of references. The Applicants request that rejection of dependent claims 21 and 24 under 35 U.S.C. § 103(a) over Ide and Voroba be withdrawn.

Claim 23 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Voroba in view of Kasai. The Applicants respectfully traverse the rejections. The Applicants respectfully submit that independent claim 23 is different from the proposed combination of references for at

least the following reasons. As set forth above, Voroba is different from the Applicants' invention as set forth in independent claim 23.

The Applicants set forth in claim 23, a multi-channel sound reproduction system for testing hearing and hearing aids comprising at least one audio source, a listening position at which a test subject is placed, and a plurality of loudspeakers placed about the listening position. The plurality of loudspeakers is for receiving audio signals from the audio source. At least two of the plurality of loudspeakers generating sound from at least a portion of the audio signals, which appears to, but does not, emanate from at least one other of the plurality of loudspeakers.

Voroba is different than the Applicants' invention as set forth in claim 23. Voroba at least fails to disclose generating sound from at least a portion of the audio signals that appears to, but does not, emanate from at least one other of a plurality of loudspeakers as set forth in Applicants' claims. Voroba merely discloses using pre-recorded noise and speech tapes (col. 7, lines 15-24).

Kasai fails to remedy the deficiencies of Voroba because Kasai also at least fails to generating sound from at least a portion of the audio signals that appears to, but does not, emanate from at least one other of a plurality of loudspeakers as set forth in Applicants' claims. Kasai is merely a system for creating surround sound effects (col. 2, lines 26-30). Therefore, the combination of Voroba and Kasai as proposed in the Office Action fails to teach all the features set forth in the Applicants claims.

The Applicants respectfully submit that both references of the proposed combination of Voroba and Kasai fail to provide motivation for combining the surround sound system of Kasai with the hearing evaluation system discloses by Voroba. The Applicants respectfully submit that

the cited references are not analogous and therefore are not combinable. Additionally as set forth above, even if combined, the proposed combination fails to disclose every feature set forth in Applicants claims.

Further, the Applicants respectfully point to the specification (last paragraph of page 6 through paragraph 2 of page 7) wherein the Applicants' set forth a plurality of reasons why a surround sound system is not combinable with a hearing test system. The Applicants respectfully submit that an entertainment television viewing system is not analogous and therefore not combinable with a hearing testing system.

Therefore, for at least the reasons set forth above, the Applicants respectfully assert that claim 23 is allowable over the proposed combination of references. The Applicants request that rejection of independent claim 23 under 35 U.S.C. § 103(a) over Voroba and Kasai be withdrawn.

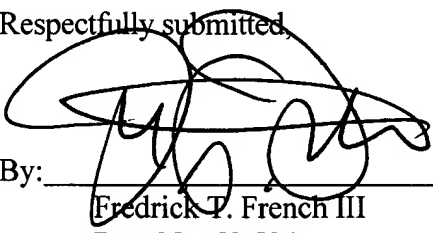
CONCLUSION

Based on at least the foregoing, the Applicants believe that claims 1-25 are in condition for allowance. If the Examiner disagrees or has any question regarding this submission, the Applicants request that the Examiner telephone the undersigned at (312) 775-8000.

A Notice of Allowance is courteously solicited.

Respectfully submitted,

By: _____


Fredrick T. French III
Reg. No. 52,524

Dated: July 2, 2004

McAndrews, Held & Malloy, Ltd.
500 West Madison Street - Ste. 3400
Chicago, Illinois 60661
(312) 775-8000